

(English Translation)

Section [0020], Cited Reference 2, JP 06-100935

[0020] The steel thus cooled down to 550 – 350°C as above transforms to a single phase of martensite structure through martensitic transformation that takes place by cooling with the rate of faster than or equal to air-cooling. The tempering treatment is performed so that toughness and ductility are enhanced and desired strength can be obtained because the residual stress within the martensite structure can be relieved through recovery and the supersaturated carbon atom is obliged to precipitate as carbide. In this regard, since the toughness notably decreases due to inverse transformation when heated to the temperature above or at A_{c1} transformation point, the tempering treatment shall be performed at the temperature below or at A_{c1} transformation point.